CLAIMS

1. (Amended) A medical electrical lead, comprising:

a lead body including a proximal end;

a sensor capsule coupled to the lead body; and

a sensor bus coupled to the sensor capsule and extending through the lead body to the lead body proximal end, the sensor bus comprising:

an elongate coil conductor,

an elongate cable conductor extending within the coil conductor, ~~and~~

an electrically insulative layer, positioned between the cable conductor and the coil conductor, having a relative dielectric coefficient less than approximately 10; and

an average gap between the outer diameter of the insulative layer and the coil conductor.

2. (Original) The lead of claim 1, wherein the insulative layer includes an outer diameter and an inner diameter; the outer diameter greater than approximately 1.4 times the inner diameter.

3. (Original) The lead of claim 1, wherein the relative dielectric coefficient of the insulative layer is less than approximately 3.

4. (Original) The lead of claim 2, wherein the outer diameter of the insulative layer is greater than approximately 2 times the inner diameter of the insulative layer.

5. (Amended) The lead of claim 1, wherein ~~the sensor bus further comprises an average gap between the outer diameter of the insulative layer and the coil conductor;~~ the average gap less than approximately 0.003 inch.

6. (Original) The lead of claim 5, wherein the average gap is less than approximately 0.001 inch.

7. (Original) The lead of claim 1, wherein the insulative layer is formed as a coating on the cable conductor.

8. (Original) The lead of claim 1, wherein the insulative layer comprises a fluoropolymer.

9. (Original) The lead of claim 8, wherein the fluoropolymer is ETFE.

10. (Original) The lead of claim 1, wherein the insulative layer comprises a silicone.

11. (Original) The lead of claim 1, wherein the insulative layer comprises a polyimide.

12. (Original) The lead of claim 1, wherein the insulative layer comprises polyurethane.

13. (Original) The lead of claim 1, wherein the coil conductor includes an MP35N alloy wire having a core of a lower resistance than the MP35N alloy.

14. (Original) The lead of claim 1, wherein the cable conductor includes an MP35N alloy wire having a core of a lower resistance than the MP35N alloy.

15. (Original) The lead of claim 1, wherein the cable conductor includes an outer diameter less than approximately 0.008 inch.

16. (Original) The lead of claim 1, wherein the coil conductor includes an inner diameter less than approximately 0.020 inch.

17. (Original) The lead of claim 1, wherein the coil conductor includes a longitudinal axis and a distal portion extending laterally away from the longitudinal axis to couple with the sensor capsule.

18. (Original) The lead of claim 1, wherein the sensor capsule includes a feedthrough pin and the cable conductor is coupled to the feedthrough pin.

19. (Original) The lead of claim 1, wherein the lead body includes a plurality of lumens and the sensor bus extends through a one of the plurality of lumens.

20. (Original) An implantable medical electrical lead, comprising:

a lead body including a proximal end;

a sensor capsule coupled to the lead body; and

a sensor bus coupled to the sensor capsule and extending through the lead body to the lead body proximal end, the sensor bus comprising:

an elongate coil conductor,

an elongate cable conductor extending within the coil conductor and electrically isolated from the coil conductor,

an average gap between the cable conductor and the coil conductor, and

means to reduce a capacitance between the cable conductor and the coil conductor over an implanted life of the lead, the means comprising a polymer material having a dielectric coefficient less than approximately 10 and filling greater than approximately 50% of the average gap between the cable conductor and the coil conductor.

21. (Original) The lead of claim 20, wherein the polymer material fills greater than 80% of the average gap between the cable conductor and the coil conductor.

22. (Original) The lead of claim 20, wherein the relative dielectric coefficient of the polymer material is less than approximately 3.

23. (Original) The lead of claim 20, wherein the polymer comprises a fluoropolymer.

24. (Original) The lead of claim 23, wherein the fluoropolymer is ETFE.

25. (Original) The lead of claim 20, wherein the insulative layer comprises a silicone.

26. (Original) The lead of claim 20, wherein the insulative layer comprises a polyimide.

27. (Original) The lead of claim 20, wherein the insulative layer comprises a urethane.

28. (Original) The lead of claim 20, wherein the coil conductor includes an MP35N alloy wire having a core of a lower resistance than the MP35N alloy.

29. (Original) The lead of claim 20, wherein the cable conductor includes an MP35N alloy wire having a core of a lower resistance than the MP35N alloy.

30. (Original) The lead of claim 20, wherein the cable conductor includes an outer diameter less than approximately 0.008 inch.

31. (Original) The lead of claim 20, wherein the coil conductor includes an inner diameter less than approximately 0.020 inch.

32. (Original) The lead of claim 20, wherein the coil conductor includes a longitudinal axis and a distal portion extending laterally away from the longitudinal axis to couple with the sensor capsule.

33. (Original) The lead of claim 20, wherein the sensor capsule includes a feedthrough pin and the cable conductor is coupled to the feedthrough pin.

34. (Original) The lead of claim 20, wherein the lead body includes a plurality of lumens and the sensor bus extends through a one of the plurality of lumens.

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a sensor bus coupled to the sensor capsule and extending through the lead body to the lead body proximal end, the sensor bus comprising:

an elongate coil conductor,

an elongate cable conductor extending within the coil conductor, ~~and~~

an electrically insulative layer, positioned between the cable conductor and the coil conductor, having a relative dielectric coefficient less than approximately 10; and

an average gap between the outer diameter of the insulative layer and the coil conductor.

2. (Original) The lead of claim 1, wherein the insulative layer includes an outer diameter and an inner diameter; the outer diameter greater than approximately 1.4 times the inner diameter.

3. (Original) The lead of claim 1, wherein the relative dielectric coefficient of the insulative layer is less than approximately 3.

4. (Original) The lead of claim 2, wherein the outer diameter of the insulative layer is greater than approximately 2 times the inner diameter of the insulative layer.

5. (Amended) The lead of claim 1, wherein ~~the sensor bus further comprises an average gap between the outer diameter of the insulative layer and the coil conductor;~~ the average gap less than approximately 0.003 inch.

6. (Original) The lead of claim 5, wherein the average gap is less than approximately 0.001 inch.

7. (Original) The lead of claim 1, wherein the insulative layer is formed as a coating on the cable conductor.

8. (Original) The lead of claim 1, wherein the insulative layer comprises a fluoropolymer.

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20. (Original) An implantable medical electrical lead, comprising:

a lead body including a proximal end;

a sensor capsule coupled to the lead body; and

a sensor bus coupled to the sensor capsule and extending through the lead body to the lead body proximal end, the sensor bus comprising:

an elongate coil conductor,

an elongate cable conductor extending within the coil conductor and electrically isolated from the coil conductor,

an average gap between the cable conductor and the coil conductor, and

means to reduce a capacitance between the cable conductor and the coil conductor over an implanted life of the lead, the means comprising a polymer material having a dielectric coefficient less than approximately 10 and filling greater than approximately 50% of the average gap between the cable conductor and the coil conductor.

21. (Original) The lead of claim 20, wherein the polymer material fills greater than 80% of the average gap between the cable conductor and the coil conductor.

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